

# Zinc phosphide

## Use Profile

Rodenticide to control rats and mice in sugarcane.  
Aerially applied during winter months.

## Initial Detections:

Contract lab

- Sept. 23, 1986: Six sites – five detections  
(simultaneously, DEP evaluated the analytical procedure used and determined it to be valid)
- Jan. 14, 1987: Six sites and three public water intakes – six detections

Due to these unusual results DEP contacted a cooperative sugar cane grower, David Simonson Inc. to assist in a field study:

Aug. 1987:

Purpose: measure detectable levels, if any, of zinc phosphide in a “canal type” irrigation system prior to and over a period of time after a labeled use application.

All samples below detection level.

## Subsequent Monitoring:

Added to analytical list for ambient pesticide monitoring program (quarterly sampling)

69 sampling events at nine sites:

S2, S3, S4, S5A, S6, S7, S8, S190, L3BRS

Two detections: Oct. '89 (S190 27 µg/L; MDL 0.1)

Feb. '91 (S6 25.7 µg/L; MDL 1.0)

At the August 1999 TOC meeting, the request for termination of monitoring was tempered with the TOC recommendation to reduce the monitoring to once a year, during the normal application period, at the same nine sites. Since then, six sampling events have occurred, without a single detection.

Cost: \$110 per sample

## Human Health Assessment

Oral or inhalation exposure: Toxicity Category I

Not classified for carcinogenicity, since dietary exposure in foods is negligible.

## Environmental Assessment

Degradation/dissipation: hydrolysis, formation of volatile phosphine and zinc ions; rates appear to be pH and soil moisture dependent.

Non-persistent under most environmental conditions and relatively immobile.

On an acute oral basis, highly toxic to avian species and small mammals.

Potential to kill non-target birds and mammals.

Should not be detrimental to predators or scavengers who eat target animals.